



Illinois Environmental Protection Agency · 2200 Churchill Road, Springfield, IL 62706

217/785-5733

Refer to: 11911501 -- Madison County
Wood River/Amoco-Main Plant

July 26, 1984

Dave Dolan
USEPA - Region V
230 South Dearborn Street 5HW-13
Chicago, Illinois 60604

Dear Mr. Dolan:

Please find enclosed all documents concerning Amoco's disposal of aluminum chloride at its Wood River facility. Unfortunately it is very limited. I also discussed the matter with Rama Chaturvedi of our Permit Section and Perry Mann of our Southern Regional Office. Neither was able to provide any additional information. It appears that you will have to base your decision on the information Amoco supplied.

If I can be of any further assistance, please contact me at 217/785-5733.

Sincerely,

Dale A. Helmers

Dale A. Helmers
Compliance Monitoring Section
Division of Land Pollution Control

DAH:mkb:16/6

Enclosure

cc: Division File
Southern Region

EPA Region 5 Records Ctr.



291099



Amoco Oil Company

200 East Randolph Drive
Post Office Box 6110-A
Chicago Illinois 60680

November 9, 1983

Mr. Rama Chaturvedi
Division of Land Pollution Control
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, Illinois 62706

Dear Sir:

Treatment of Waste Aluminum Chloride at Wood River

As you requested in our telephone conversation of November 8, enclosed is a copy of REACT's proposal for treatment of waste aluminum chloride from Amoco's former Sugar Creek, Missouri refinery in water softener solids pits at our Wood River facility.

Assuming that you will have the opportunity to review this proposal and the information attached to my October 23, 1983 letter by the time of our November 18 meeting, we can plan to discuss additional Illinois requirements for this operation at that time.

Yours truly,

E. J. Sullivan
Environmental Consultant
Mail Code 1203

EJS/ab

Attachment

cc: Larry Eastep - IEPA w/o att.

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NOV 14 1983

**E.P.A. — D.L.P.C.
STATE OF ILLINOIS**



RYCKMAN'S EMERGENCY ACTION & CONSULTING TEAM

June 6, 1983
REACT Project No. 1011

Mr. Ron Ginson
Environmental Consultant
Amoco Oil Company
MC-1203
Box 6110-A
Chicago, IL 60680

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**E.P.A. — D.L.P.C.
STATE OF ILLINOIS**

Ron:

As per instruction of Duane Nelson, Supervisor of Environmental Engineering, Amoco Sugar Creek Refinery, on May 26, 1983, this letter is to transmit our proposal for monitoring, packaging, transport, treatment and ultimate disposition of aluminum chloride at your Sugar Creek Refinery.

After a site inspection of the Sugar Creek facility conducted by Mark Ryckman on May 26, 1983, the proposed scope of work with schedule and cost estimates is as follows:

Phase I. Soil Monitoring Program: Conduct soil borings to determine if $AlCl_3$ at the containment site has been totally reacted. The facility's records indicate that in June of 1982, a total of 7,000 pounds of $AlCl_3$ were placed in a 4' x 8' x 3' pit with 7,500 pounds of lime. To arrest the HCl gas which was liberated, an estimated 168 cubic yards of soil were placed on top of the pit (on-site estimate by REACT). Eight test borings will be conducted to determine if the material is water reactive and the pH is between 2 and 12. The cost estimate for this phase is \$3,200 with three days for completion. The cost estimate presented includes labor, materials, equipment, subsistence, travel, laboratory, and an engineering report. If additional borings are required, charges will be according to REACT's billing schedule on a time and materials basis.

Phase I.A. (Optional): Exhumation of soil contaminated with $AlCl_3$, transport, treatment and ultimate disposition at Amoco's, Wood River Refinery. If it is determined that unreacted $AlCl_3$ persists, this material will be containerized and transported to Amoco's Wood River facility for treatment in your Alkaline Water Softener Pit. A cost estimate and schedule will be provided with actual charges on a time and materials basis once the volume of materials is determined from Phase I above.

Phase I.B (Optional) $AlCl_3$: Contaminated soil in situ treatment. Since it may be dangerous to extract and transport moist $AlCl_3$, contaminated soil

Mr. Ron Ginson
June 6, 1983
Page Two

will be mixed with sand and soda ash. A thin layer will be spread over the contaminant basin and allowed to react for a 30-60 day period. Confirmation reaction tests will be conducted to ensure reaction completion and the formation of AlOH_3 . A cost estimate will be provided after the completion of Phase I.

Phase I.C (option 3) Area capping and water diversion: As requested by Tom Pauling of MO DNR, the contaminated area will be capped and surface water directed away from cap (note this will require cutting through containment walls. Cost estimate for this phase of work is \$4,700 with two days scheduled completion (cap design - earth borrow + 6-mil poly membrane + 4" sand cover + 2-6" culverts through embankment.)

Phase II: Removal/packaging/transport/treatment of estimated 6 - 7 tons of AlCl_3 from Amoco's Sugar Creek Refinery to Amoco Wood River Refinery. Material transport in drums and reaction over 30 - 45-day period at Wood River. Reaction bed - 4" deep lined with 6-mil poly, 3" sand + AlCl_3 covered with soda ash on the bank of the lagoon. Cost estimate of \$4,200 and time of completion five days.

Ron, we suggest that this work be conducted on a time and materials basis according to the attached contract. If you have any questions, don't hesitate to give me a call at 800-325-1398.

Cordially,


Jeffrey L. Peters
Vice President

mcs

Enclosures

cc: Mr. Ed Sullivan
Amoco

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RYCKMAN'S EMERGENCY ACTION & CONSULTING TEAM

CONTRACT FOR ENGAGING PROFESSIONAL SERVICES

Project No. 1011

NOV 14 1983

E.P.A. - D.L.F.C.
STATE OF ILLINOIS

This is to authorize REACT by way of a \$3,700 payment on account. (Wire transfer instructions: "St. Louis County Bank; Clayton, Missouri (STL CO Clayton), routing number 0810-0459-1; for further credit to Ryckman's Emergency Action & Consulting Team, account No. 379-080-1)". Payment on account and charges to be for actual time and material expenditures according to REACT's Billing Schedule. The scope of work is as follows:

For Phases I and II, a time and materials contract with an engineering cost estimate of \$7,400 for removal and transport and treatment of an estimated 6 - 7 tons of $AlCl_3$, and soil testing at containment site to determine location and reaction state of buried aluminum chloride. On-site treatment and/or transport and treatment of buried materials and site entombment not included in cost estimate provided, albeit to be conducted on a time and materials basis with a cost estimate provided at completion of Phase I. The scope of work as per June 2, 1983 letter to Mr. Ron Ginson.

All work will be conducted by, or under the direct supervision of, a registered engineer or certified scientist. Billings shall include the necessary supervision, labor, materials, equipment and services rendered at all locations to perform and complete this scope of work in a professional manner. Billings shall include any replacement costs of equipment materially damaged in conjunction with the performance of this contract, as well as decontamination expenses, provided however, that client shall not be liable for replacement costs occasioned by REACT's negligent acts.

If REACT is not permitted to or is prevented from completing the work as described in this contract, due to circumstances beyond REACT's control, including acts of God, payment for services through the date of termination shall then be paid in full at the time of termination. Client shall hold REACT harmless from all liabilities except for those liabilities which are the result of REACT's intentional or negligent acts. Any controversy or claim arising out of, or relating to, this contract or the breach thereof, shall be settled by the American Arbitration Association, and judgment upon the award rendered by the Arbitrator(s) may be entered into any court having jurisdiction thereof.

Terms of payment: Payment on account, indicated above, due within twenty-four (24) hours excluding clients with executed retainership contracts. Billings, including progress payments, are due net ten (10) days. This agreement shall commence on _____ and is endorsed by an authorized representative of REACT and the Client Representative:

Client Representative

Name: _____
Title: _____
Company: _____
Address: _____

Phone: _____
Date: _____

REACT Representative

Mary R. Miller

Vice President

REACT, A Division of
D. W. Ryckman & Associates, Inc.
P. O. Box 27310
St. Louis, MO 63141

314-569-0991
800-325-1398 (Outside Missouri)



RYCKMAN'S EMERGENCY ACTION & CONSULTING TEAM

August 26, 1983
REACT Project No. 1011

Mr. Ron Ginson
Environmental Consultant
Amoco Oil Company
MC-1203
Box 6110-A
Chicago, IL 60680

Ron:

Confirming our telephone conversation of this morning, this letter should clear up any misunderstandings or misconceptions that you may have regarding our recommendations of our letter of June 6, 1983 (copy attached). If Option A under phase I is selected for implementation, capping of the site, as presented in Option C under phase I, would not be required since a potential hazardous material would be packaged and removed from the site for treatment and disposal at your Wood River facility.

If Option B under phase I is selected for implementation or if the material at the site proves to be inert through tests run on the soil bores collected in phase I, the site will be capped as outlined in Option C under phase I.

I trust that this information will help to clarify our proposal as presented in our letter of June 6, 1983. If you have any further questions, or if we may be of further assistance please don't hesitate to give us a call.

Cordially,

Jeffrey L. Peters
Vice President

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Enclosure

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STATE OF ILLINOIS**





Amoco Oil Company

200 East Randolph Drive
Post Office Box 6110-A
Chicago, Illinois 60680

October 18, 1983

Mr. Rama Chaturvedi
Division of Land Pollution Control
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, Illinois 62706

Dear Sir:

Disposal of Waste Aluminum Chloride

Attached are copies of correspondence related to the treatment at Amoco's former Wood River refinery of waste aluminum chloride from its former refinery in Sugar Creek, Missouri. The correspondence comprises: 1) a letter to USEPA Region VII describing the plan and requesting approval, and 2) the letter of approval from Region VII.

In accordance with Mr. David Doyle's suggestion, we would appreciate your letting us know any State of Illinois requirements applicable to this operation. It may help you to know that both the Wood River and Sugar Creek sites have EPA I.D. numbers. Reactive waste treatment is included on Wood River's Part A of the RCRA permit application. The non-hazardous reaction products, sodium chloride and aluminum hydroxide, will become minor constituents of the water softener solids contained in the pit where the treatment will be conducted. The waste will be manifested as hazardous. Will it also require an Illinois special waste manifest?

If you have any questions, please call me at 312/856-5858.

Yours truly,

E. J. Sullivan
Environmental Consultant
Mail Code 1203

cc: Larry Eastep - IEPA

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E.P.A. - D.L.P.C.
STATE OF ILLINOIS



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
324 EAST ELEVENTH STREET
KANSAS CITY, MISSOURI - 64106

OCT 5 1983

Mr. J. G. Huddle
Director, Environmental Control and Planning
Mail Code 1203
Amoco Oil Company
P.O. Box 6110-A
Chicago, Illinois 60680

Copies: R W GINSON
CFH GILLMANN
R.G. GRAHAM
H.A. MC GANDLESS
R.J. GANNON

EPA I.D. No. MOD007161425
Sugar Creek, Missouri

Dear Mr. Huddle:

The Environmental Protection Agency (EPA) has reviewed the plan dated August 26, 1983, for the treatment and disposal of waste aluminum chloride presently stored at the Amoco Oil Company, Sugar Creek, Missouri, refinery. Our comments on this plan are as follows:

EPA has no objection to the removal of the anhydrous aluminum chloride-lime mixture to Amoco's Wood River, Illinois, refinery for treatment. Both the transportation and treatment of this waste must, of course, be in complete compliance with the applicable federal requirements in 40 C.F.R. Parts 262 through 265, especially Part 265.17(b) concerning the requirements for handling reactive hazardous waste. Amoco should also contact the Illinois EPA (Mr. Rama Chaturvedi, Springfield, Illinois) and the Missouri Department of Natural Resources (MDNR) (Mr. Paul Meiburger), to determine what applicable state requirements must be adhered to during this operation.

Concerning the anhydrous material still at the Sugar Creek refinery, if Amoco chooses in-situ treatment of this material (Option 2), again all federal requirements for treatment of a hazardous waste must be complied with. The MDNR should also be contacted to ensure compliance with State requirements prior to beginning treatment. Also, if Option 2 is chosen, it is requested that Amoco contact EPA prior to beginning the treatment process and that copies of all confirmation reaction tests be sent to this office as soon as possible after they are conducted.

If you have any questions concerning this matter, please call me at 816/374-7133.

Sincerely yours,

David Doyle

David Doyle
Waste Compliance Engineer
Air and Waste Compliance Branch

cc: Art Groner -Missouri Department Natural Resources
Bob Stone, U.S. EPA, Region V
Rama Chaturvedi, Illinois EPA

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OCT 10 1983

OFFICE OF
J. G. HUDDLE

OCT 16 1983



Amoco Oil Company

200 East Randolph Drive
Post Office Box 6110-A
Chicago, Illinois 60680

August 26, 1983

Certified Mail No. P162199385
Return Receipt Requested

Mr. David Doyle
Environmental Engineer, Enforcement Division
United States Environmental Protection Agency
Region VII, 324 East Eleventh Street
Kansas City, Missouri 64106

Dear Mr. Doyle:

Please refer to Ms. Jane Werholtz's letter to Mr. Ronald J. Ganim, concerning aluminum chloride treatment and disposal. In accordance with paragraph 8c of the Consent Order and Agreement attached to the letter, Amoco herewith submits the following plan for waste aluminum chloride (AlCl_3) treatment and disposal.

Amoco will enter into a contract with Ryckman's Emergency Action and Consulting Team (REACT) to package, transport, treat, and dispose of waste aluminum chloride. REACT has previous experience in treating and disposing of AlCl_3 . REACT will comply with all applicable state and federal regulations and obtain approvals, permits, etc., as required.

Following is a description of REACT's plan:

The unreacted aluminum chloride-lime mixture presently stored in a shed in the West plant will be packaged in drums and transported to Amoco's Wood River, Illinois, refinery. The Wood River refinery has a RCRA facility with interim status that is permitted to treat aluminum chloride. The material will be reacted over a period of 30-45 days at a temporary reaction bed located at the RCRA facility. The reaction bed will be about 4 inches deep and consist of: (1) a 6-mil poly liner, (2) a 3-inch sand bed, (3) about 1-inch of AlCl_3 , and (4) about $\frac{1}{2}$ inch to 1 inch of soda ash. A water spray nozzle will be used to fog the reaction bed. The AlCl_3 will be gradually converted to $\text{Al}(\text{OH})_3$. The fog nozzle will prevent excessive generation of AlCl_3 fumes. Liquid run-off will be directed to the facility. Reaction completion will be checked by use of pH paper when an HCl mist is no longer observed. The neutralized waste will then be placed into the facility, which is a water softener solids pit. Accumulated solids are ultimately hauled to an industrial landfill for disposal.

For the reacted material in place at the refinery: REACT will conduct soil borings to determine if the AlCl_3 has been totally reacted. Eight test borings will be conducted to determine if the material is water reactive and the pH is between 2 and 12. Additional borings will be made, if necessary, based on results of initial testing.

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STATE OF ILLINOIS

Mr. David Doyle
Page 2

If hazardous waste is present, one of the following two options will be utilized:

Option 1: Exhumation of soil contaminated with $AlCl_3$. If it is determined that unreacted $AlCl_3$ persists, this material will be containerized and transported to Amoco's Wood River facility for treatment in the same manner as the unreacted aluminum chloride-lime mixture.

Option 2: In-situ treatment. In the unlikely event that the material is found to be unstable, a thin layer of contaminated soil mixed with sand and soda ash will be spread over the site and allowed to react for a 30-60 day period. Confirmation reaction tests will be conducted to ensure reaction completion.

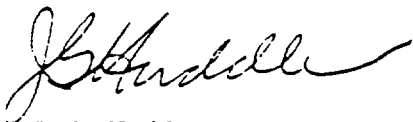
If Option 2 is chosen, or if the material is proved to be inert by testing of the borings, the site will be closed as follows:

The contaminated area will be capped, and surface water directed away from cap. (Cap design: earth borrow + 6-mil poly membrane, + 4-inch sand cover + two 6-inch culverts through embankment.)

Amoco will provide an experienced supervisor both at Sugar Creek and Wood River to coordinate activities with REACT.

Please contact Mr. R. W. Ginson at (312) 856-7834 if there are any questions or comments concerning the above plans. Upon receipt of your approval, we will implement the plan.

Sincerely,



J. G. Huddle
Director, Environmental Control and Planning
Mail Code 1203

JGH/lar

R. J. Ganim
R. W. Ginson
File 89.606

P.S. Our contact at REACT is Mr. Jeffrey L. Peters, Vice President. His address is 2208 Welsch Industrial Court, P. O. Box 27310, St. Louis, MO 63141. His telephone number is 800-325-1398.

JGH

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